

Figure 2

1 ctgcagtga taataaatg tgtgtttgtc cgaaatacgc gttttgagat ttctgtcgcc
61 gactaaattc atgtcgcgcg atagtgggtt ttatcgccga tagagatggc gatattggaa
121 aaatcgatat ttgaaaatat ggcatattga aaatgtcgcc gatgtgagtt tctgtgtaac
181 tgatatcgcc atttttccaa aagtgtttt tgggcatacg cgatatctgg cgatacggct
241 tatatcgttt acgggggatg gcgatatagc actttggcga cttgggcgat tctgtgtgtc
301 gcaaatatcg cagtttcgat ataggtgaca gacgatatga ggctatatcg ccgatagagg
361 cgacatcaag ctggcacatg gccaatgcat atcgatctat acattgaatc aatattggca
421 attagccata ttagtcattg gttatatagc ataaatcaat attggctatt ggccattgca
481 tacgttgtat ctatatcata atatgtacat ttatattggc tcatgtccaa tatgaccgcc
541 atgttgacat tgattattga ctagttatta atagtaatca attacggggg cattagttca
601 tagcccatat atggagttcc gcgttacata acttacggta aatggccgcg ctcgtgaccg
661 cccaacgacc cccgcccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata
721 gggactttcc attgacgtca atgggtggag tatttacggg aaactgccc cttggcagta
781 catcaagtgt atcatatgcc aagtcgggcc ccctattgac gtcaatgacg gtaaatggcc
841 cgcttgcat tatgcccagt acatgacctt acgggacttt cctacttggc agtacatcta
901 cgtattagtc atcgctatta ccattggtgat gcgtttttgg cagtacacca atgggcgtgg
961 atagcggttt gactcacggg gatttccaag tctccacccc attgacgtca atgggagttt
1021 gttttggcac caaatcaac gggactttcc aaaatgtcgt aataacccc cccggttgac
1081 g^{caaat}gggc ggtaggcgtg tacggtggga ggtcta ^{tata} agcagagctc gtttagtgaa
1141 ccg⁺¹tcagatc gcctggagac gccatccacg ctgttttgac ctccatagaa gacaccggga
1201 ccgatccagc ctccgcggcc gggaacggtg cattggaacg cggattcccc gtgccaagag
1261 tgacGTAAGT ACCGCTATA GACTCTATAG GCACACCCCT TTGGCTCTTA TGCATGCTAT
1321 ACTGTTTTTG GCTTGGGGCC TATACACCCC CGCTCCTTAT GCTATAGGTG ATGGTATAGC
1381 TTAGCCTATA GGTGTGGGTT ATTGACCATT ATTGACCACT CCCCTATTGG TGACGATACT
1441 TTCCATTACT AATCCATAAC ATGGCTCTTT GCCACAATA TCTCTATTGG CTATATGCCA
1501 ATACTCTGTC CTTAGAGAC TGACACGGAC TCTGTATTTT TACAGGATGG GGTCCCATTT
1561 ATTATTTACA AATTCACATA TACAACAACG CCGTCCCCCG TGCCCGCAGT TTTTATTAAA
1621 CATAGCGTGG GATCTCCACG CGAATCTCGG GTACGTGTTC CGGACATGGG CTCTTCTCCG
1681 GTAGCGGCGG AGCTTCCACA TCCGAGCCCT GGTCCCATGC CTCCAGCGGC TCATGGTCCG
1741 TCGGCAGCTC CTTGCTCCTA ACAGTGGAGG CCAGACTTAG GCACAGCACA ATGCCACCA
1801 CCACCAAGTGT GCCGCACAAG GCCGTGGCGG TAGGGTATGT GTCTGAAAAT GAGCTCGGAG
1861 ATTGGGCTCG CACCGTGACG CAGATGGAAG ACTTAAGGCA GCGGCAGAAG AAGATGCAGG
1921 CAGCTGAGTT GTTGATTCT GATAAGAGTC AGAGGTAAC CCCGTTGCGG TGCTGTTAAC
1981 GGTGGAGGGC AGTGTAGTCT GAGCAGTACT CGTTGCTGCC GCGCGGCCA CCAGACATAA
2041 TAGCTGACAG ACTAACAGAC TGTTCTTTTC CATGGGTCTT TTCTGCAGtc accgtccttg
2101 acacgatgga gtcctctgcc aagagaaag ^atgaccctga taatcctgac gagggccctt
2161 cctccaaggt

Enhancer Region
(~600 - ~1081)

Pol II Promoter
(1081 - 1143)

Exon 1 (5' UTR)
(1144 - 1264)

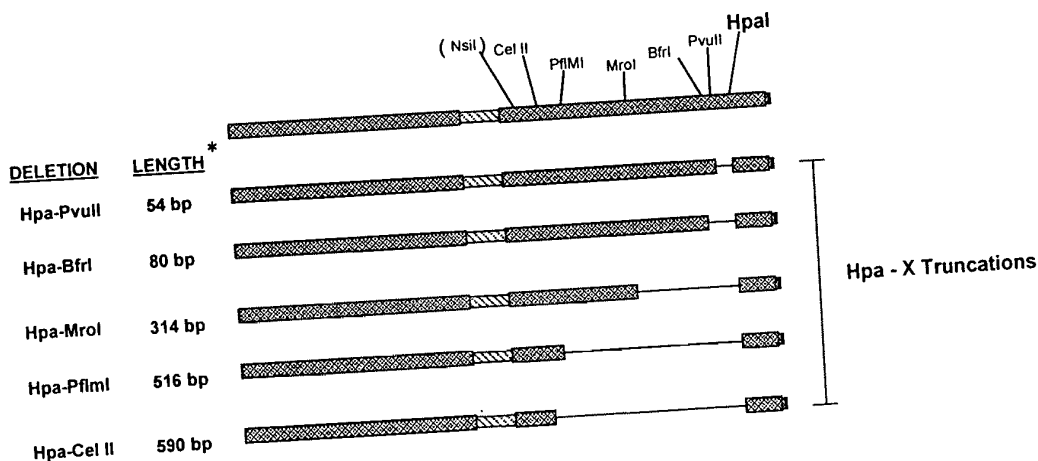
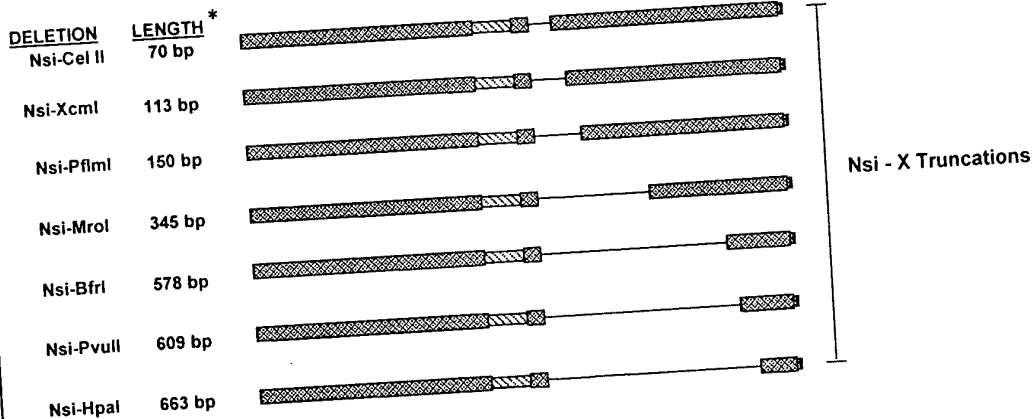
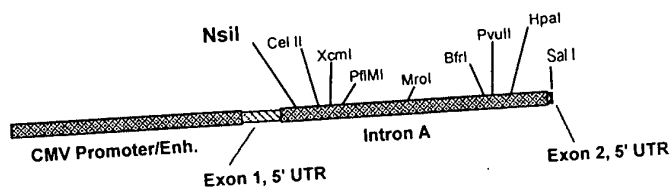
Intron A
(1265 - 2088)

Exon 2 (5' UTR,
Start of Trl.)
(2089 -)

0997096-104394

Figure 3

Deletions Made Within Intron A of CMV IE1



* Following restriction enzyme digestion, blunting, religation

0597066-10101

Intron A Internal Deletion Mutants
(Transiently-Transfected 293 cells)

Figure 4

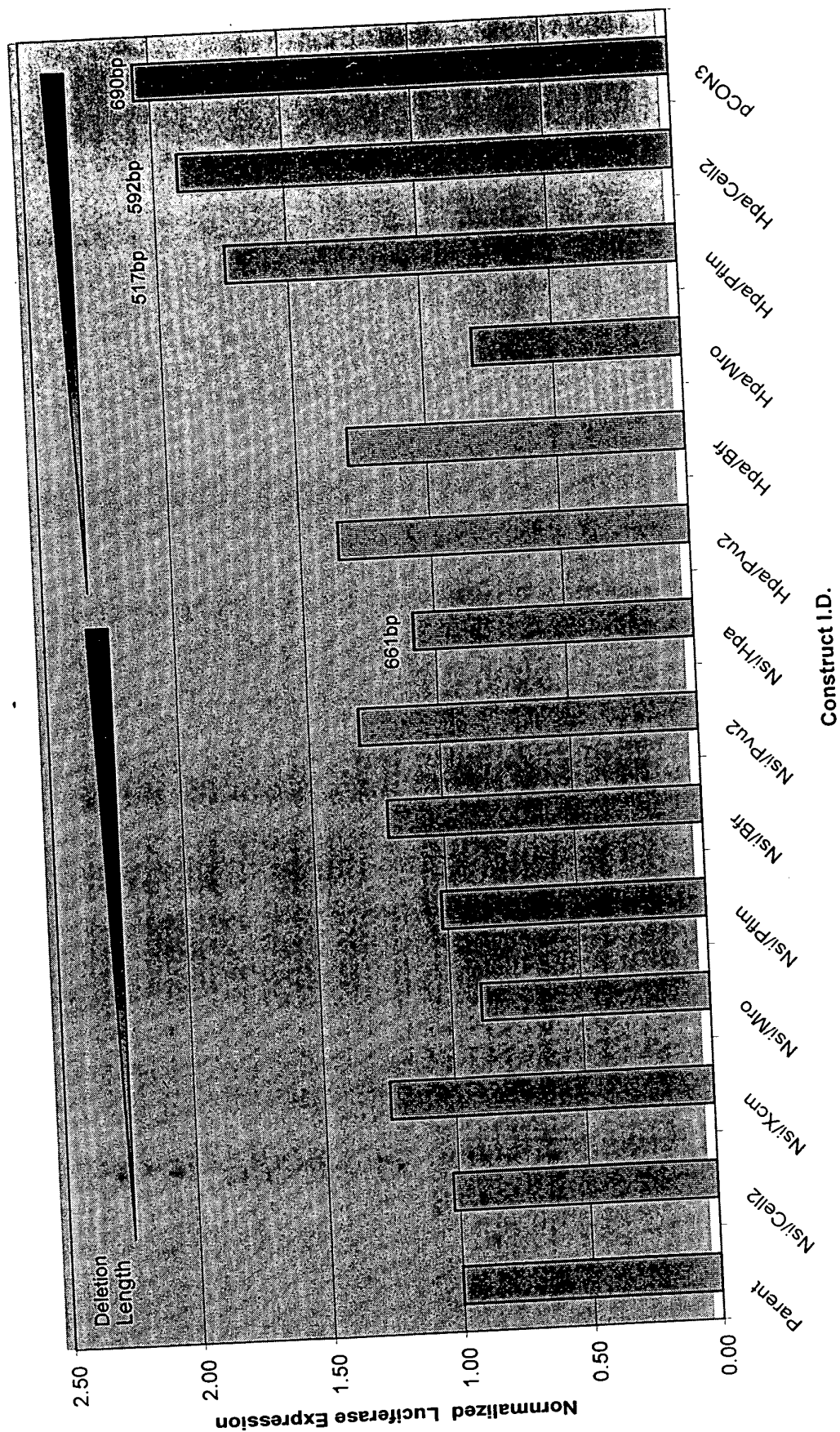


Figure 5A

1. Wild Type Rabbit β -Globin Sequence

GTTGGTATCCTTTTACAGCACAACCTTAATGAGACAGATAGAACTGGTCTTGTAGAAACA

Splice Donor

GAGTAGTCGCCTGCTTTTCTGCCAGGTGCTGACTTCTCTCCCCTGGGCTGTTTTCATTTTCTCAG

Branch Pt.

Polypyrimidine Tract

Figure 5B

2. Optimized Rabbit β -Globin Sequence

GTAAGTATCCTTTTACAGCACAACCTTAATGAGACAGATAGAACTGGTCTTGTAGAAACA

Splice Donor

GAGTAGTCGCCTGCTTTTCTGCCAGGTACTAACTTCTCTCCCCTCTCCTCTTTTCTTTTCTGCAG

Branch Pt.

Polypyrimidine Tract

Figure 6

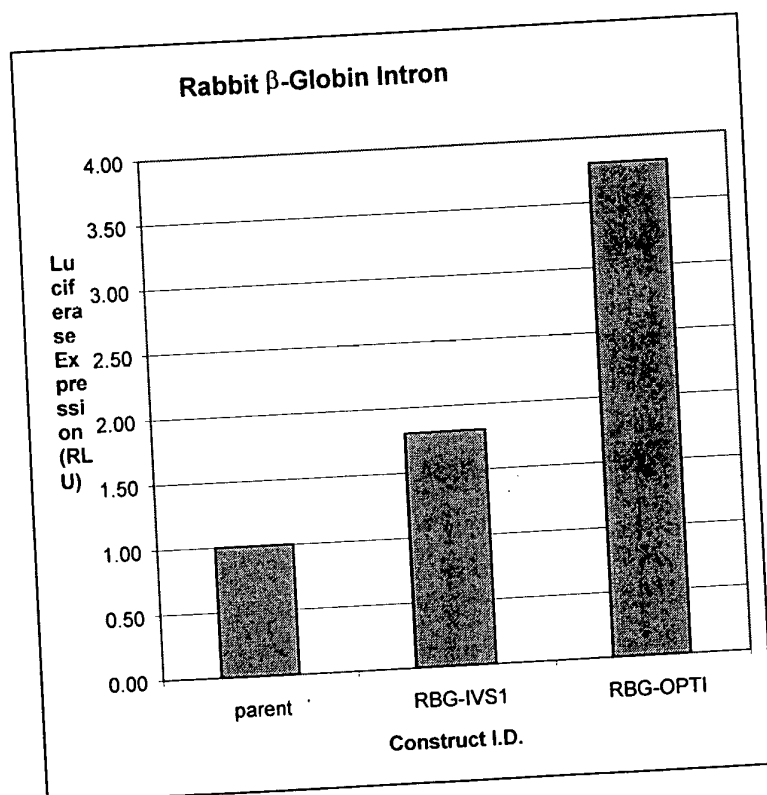


FIGURE 7

**In Vivo Immunogenicity of Plasmid Vectors
Containing Modified Introns**

